

Amendments to the Claims:

The following listing reflects amendments to the claims and replaces all prior versions and listings of claims in this application.

1.-25. (Cancelled)

26. (Currently Amended) A spray drying system for forming a pharmaceutical formulation, the system comprising:

an atomizer, the atomizer comprising a first channel ~~through which for~~ a liquid ~~may~~ flow, the channel comprising a constriction for spreading the liquid into a thin film in the channel, the atomizer further comprising a second channel ~~through which for~~ an atomizing gas ~~may~~ flow, the second channel being positioned so that the atomizing gas impinges the liquid thin film to produce droplets;

a drying chamber to dry the droplets to form particles; and

a collector to collect the particles dried in the chamber.

27. (New) The system of claim 26, wherein the constriction has a diameter less than 0.51 mm (0.020 in).

28. (New) The system of claim 26, wherein the constriction has a diameter less than 0.1 mm (0.005 in).

29. (New) The system of claim 26, further comprising a third channel for a gas flow.

30. (New) The system of claim 26, wherein the first channel is annular.

31. (New) The system of claim 26, wherein the drying chamber has a gas inlet stream having an inlet temperature of at least 90°C.

32. (New) The system of claim 26, wherein the drying chamber has a gas outlet stream having an outlet temperature of at least 50°C.

33. (New) A spray drying system for forming a pharmaceutical formulation, the system comprising:

an atomizer, the atomizer comprising a first channel through which a pharmaceutical liquid flows, the channel comprising a constriction for spreading the pharmaceutical liquid into a thin film in the channel, the atomizer further comprising a second channel through which an atomizing gas flows, the second channel being positioned so that the atomizing gas impinges the liquid thin film to produce droplets;

a drying chamber to dry the droplets to form particles; and

a collector to collect the particles.

34. (New) The system of claim 33, wherein the constriction has a diameter less than 0.51 mm (0.020 in).

35. (New) The system of claim 33, wherein the constriction has a diameter less than 0.1 mm (0.005 in).

36. (New) The system of claim 33, further comprising a third channel for a gas flow.

37. (New) The system of claim 33, wherein the first channel is annular.

38. (New) The system of claim 33, wherein the drying chamber has a gas inlet stream having an inlet temperature of at least 90°C.

39. (New) The system of claim 33, wherein the drying chamber has a gas outlet stream having an outlet temperature of at least 50°C.

40. (New) The system of claim 33, wherein the pharmaceutical liquid comprises an active agent and an excipient.

41. (New) The system of claim 33, wherein the particles have a rugosity above 2.
42. (New) The system of claim 33, wherein the particles have a density below 0.5 g/cm³.
43. (New) The system of claim 33, wherein the particles have a glass transition temperature above 35°C.
44. (New) The system of claim 33, wherein the particles have a mass median diameter less than 20 µm.
45. (New) A spray drying system for forming a pharmaceutical formulation, the system comprising:
 - an atomizer, the atomizer comprising a first annular channel for a liquid flow, the channel comprising a constriction for spreading the liquid into a thin film in the channel, the atomizer further comprising a second annular channel for an atomizing gas flow, the second channel being positioned so that the atomizing gas impinges the liquid thin film to produce droplets;
 - a drying chamber to dry the droplets to form particles; and
 - a collector to collect the particles.
46. (New) The system of claim 45, wherein the constriction has a diameter less than 0.51 mm (0.020 in).
47. (New) The system of claim 45, wherein the constriction has a diameter less than 0.1 mm (0.005 in).
48. (New) The system of claim 45, further comprising a third channel for a gas flow.
49. (New) The system of claim 45, wherein the drying chamber has a gas inlet stream having an inlet temperature of at least 90°C.

50. (New) The system of claim 45, wherein the drying chamber has a gas outlet stream having an outlet temperature of at least 50°C.

51. (New) The system of claim 45, wherein the particles have a rugosity above 2.

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